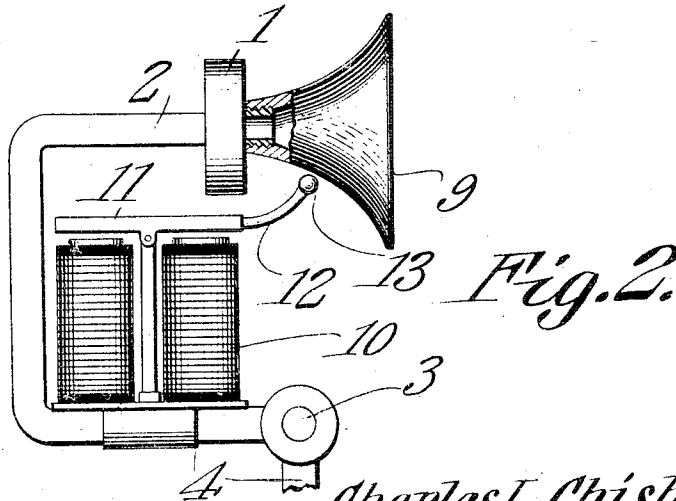
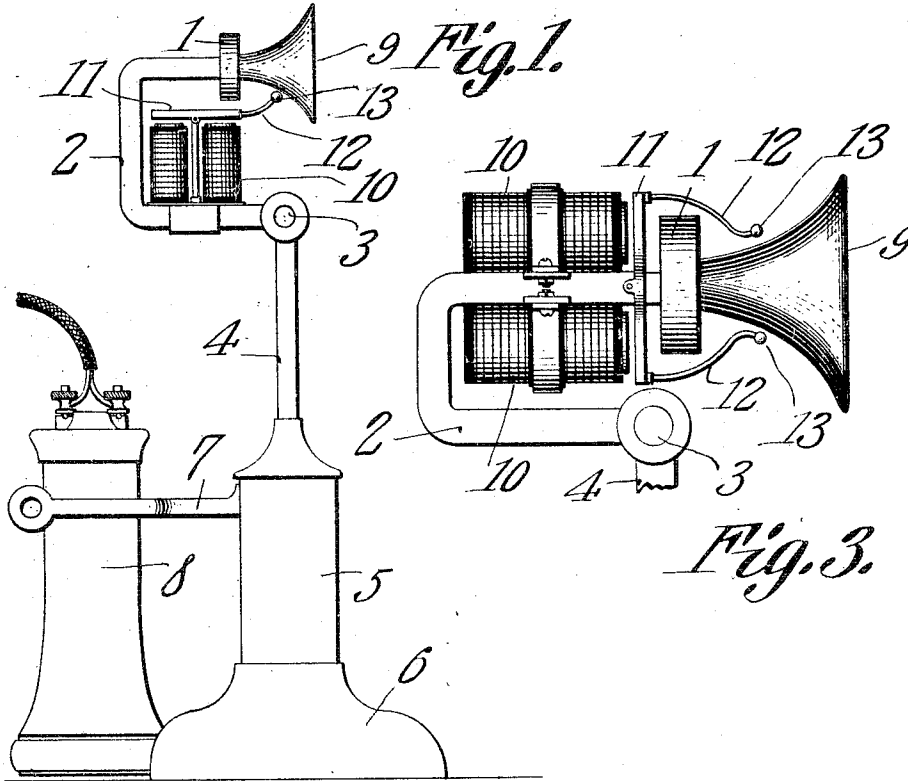


C. L. CHISHOLM.
TELEPHONE SIGNAL.
APPLICATION FILED SEPT. 7, 1909.

986,267.

Patented Mar. 7, 1911.



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UNITED STATES PATENT OFFICE.

CHARLES L. CHISHOLM, OF MARYSVILLE, NEW BRUNSWICK, CANADA.

TELEPHONE-SIGNAL.

986,267.

Specification of Letters Patent.

Patented Mar. 7, 1911.

Application filed September 7, 1909. Serial No. 516,412.

To all whom it may concern:

Be it known that I, CHARLES L. CHISHOLM, a citizen of the United States, residing at Marysville, in the Province of New Brunswick, Canada, have invented new and useful Telephone-Signals, of which the following is a specification.

This invention has reference to improvements in telephone signals and is designed to condense and simplify telephone sets to a minimum of weight and space.

The present invention is designed to utilize the mouth-pieces of telephonic transmitters for the production of call signals by making these mouth-pieces of resonant material such as bell metal and so locating the ringing magnets that they will cause the actuation of a suitable striker in operative relation to the mouth-piece so as to cause the latter to resound after the manner of the signal bells usually employed in connection with telephone sets.

Because of the utilization of the mouth-piece of the transmitter as a signal bell, tendency of the granular material in the microphonic element of the transmitter to pack is counteracted each time a signal is received, and consequently the transmitter retains at all times its highest efficiency. By providing a signal bell as described in connection with a microphonic transmitter of minute size such as described in application No. 482,212 filed by me on March 9, 1909, for a telephone transmitter, the desk sets commonly employed may be greatly simplified and condensed as well as made light in weight without detracting from their utility or sacrificing any of the advantages inherent in such telephone desk sets.

With respect to the signal side of the present invention it is not of necessity limited to a telephone transmitter but may be used in connection with any mouth-piece designed to transmit sound whether the transmission be through the mouth-piece from the wide end toward the small end or the reverse, especially where it is desirable to transmit signals.

The invention will be best understood from a consideration of the following detail description taken in connection with the accompanying drawings forming a part of this specification, in which drawings,

Figure 1 is an elevation of a desk telephone set with the invention applied and

showing the simplified and condensed form of telephone set of this character. Fig. 2 is an elevation on a larger scale of the transmitter end of the structure shown in Fig. 1. Fig. 3 shows a modification.

With the understanding that the invention is by no means limited to the utilization of the mouthpiece of a microphonic transmitter as the sounding member of the signal apparatus, but may be used in any connection in which it may be adapted, the following description will for the purposes of simplifying the description be confined to the application of the invention to the mouth-piece of a microphonic transmitter.

Referring to the drawings there is shown a transmitter 1 which may be constructed on the general lines disclosed in the aforesaid application, but since the specific construction of the transmitter does not enter into the present invention, the description and showing of the same has been omitted.

The transmitter is shown as mounted on one end of a curved arm 2 returned on itself and joined at 3 to an upright stem 4 rising from a pedestal 5 mounted on an extended base 6, the pedestal 5 and base 6 being similar to the like parts found in commercial types of desk sets. The pedestal 5 may contain, as is usual, the switching mechanism controlled by the usual telephone hook designed to receive and support a receiver 8 which latter may be of the usual type and is therefore only illustratively shown in the drawings.

The standard or pedestal 5 is made of less height than usual so that the mouth end of the receiver 8 when sustained by the hook 7 is in close relation to the table or other support upholding the base 6, this arrangement bringing the center of gravity of the device very low and materially improving the steadiness thereof. This steadiness is further improved by the fact that the transmitter structure is very small and very light so that the center of gravity of the entire device is nearly the same whether the transmitter be present or absent.

It is often desirable that the transmitter be tilted at different angles and for this purpose the junction 3 may be in the form of a hinge such as is usually employed for mounting the transmitter of the commercial type of desk sets.

The transmitter 1 is provided with a mouth-piece 9 of the flaring type, this

mouthpiece being materially shorter than the mouth pieces ordinarily employed in connection with transmitters and consequently the interior of the mouth piece may have a more pronounced flare since the outer or wider end of the mouth piece should be of about the same diameter as that of the mouth pieces ordinarily in use.

For the purposes of the present invention the mouth piece 9 is made of resonant material, preferably bell metal, and when made of the last named material, it may be suitably polished and metal plated.

The curve 2 in the member supporting the transmitter 1 is designed to receive and support electromagnets 10 such as are commonly used in connection with the signal bells employed in telephone sets. These magnets are provided with a polarized armature 11 so that this armature will readily respond to alternating signal currents coming over the line. The armature 11 may carry an arm 12 terminating in a striker head 13 in suitable relation to one side of the bell 9 so that when the signal current traverses the circuit the magnet 10 will be energized and the armature 11 will rock upon its pivot in response to the varying currents of the line and the head 13 will be caused to strike a rapid succession of blows against the outer face of the bell mouth piece 9. Of course in practice a light protecting casing may be provided for the magnets 10, but this may be made very light and will not add materially to the weight of the structure.

There are numerous ways in which the transmitter may be supported but the small size of the transmitter described in the aforesaid application makes it particularly adapted for all types of support with the mouth piece constituting the signal bell and with the bell operating magnet adjacent to the transmitter.

When the invention is used in connection with transmitters of the ordinary commercial form, the bell actuating magnet may be mounted on the transmitter casing in various ways which need not be specifically referred to.

It will be observed that the transmitter mouthpiece when constructed in accordance with the present invention performs three functions. One is that of the ordinary mouthpiece of directing the sounds against the transmitter diaphragm. Another is that of giving the usual telephone signal. Another is to cause the agitation of the granules in the microphonic element each time the signal is given and so prevent these gran-

ules from packing and thereby maintaining the most efficient condition.

In Fig. 3, the magnets are arranged on opposite sides of the support 2 directly back of the transmitter and strikers 13 are carried on each end of the armature. This gives a very compact structure.

What I claim is:—

1. An acoustical instrument having a mouth-piece constituting the sounding side of an audible signal, and means for setting the mouth-piece into vibration to cause a signal.

2. A telephone transmitter having a mouth-piece constituting the sounding side of an audible signal, and means for setting the mouth-piece into vibration to cause a signal.

3. A telephone transmitter having a metallic mouth piece and means coacting therewith to cause an audible signal.

4. A telephone transmitter having a mouth piece constituting the sounding member of an audible signal, and an electrically actuated striker in operative relation to said mouth piece.

5. A telephone desk set comprising a suitable support, a receiver and transmitter on said support, and a signal means consisting of a mouth-piece for the transmitter, a striker for said mouth-piece, and electromagnetic means for actuating the striker and also carried by the support.

6. In telephones, a microphonic transmitter, a signal means, and electric operating means for said signal means in de-packing relation to said transmitter.

7. In telephones, a microphonic transmitter, and a call-receiving means in de-packing relation to said microphonic transmitter.

8. In a telephone, a microphonic transmitter, a supporting arm therefor, and a call-receiving means mounted on said arm in de-packing relation to the microphonic element of the transmitter.

9. In a telephone, a microphonic transmitter, a pivoted supporting arm therefor, and a call-receiving means also mounted on said arm in de-packing relation to the microphonic element of the transmitter.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

CHARLES L. CHISHOLM.

Witnesses:

E. HUME TALBERT,
F. T. CHAPMAN.